

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended): A method of generating mask data for a set of masks used to transfer ~~a pattern~~ patterns for delineating ~~a circuit pattern~~ circuit patterns of a semiconductor integrated circuit using a projection exposure system, the method comprising:

preparing design data having ~~a design pattern~~ design patterns corresponding to the ~~pattern~~ patterns to be transferred on a semiconductor substrate;

generating resized data by enlarging the design patterns of the design data by a predetermined resizing quantity;

generating first mask data by filling a space area between the enlarged design patterns, the space area having a first space width of a space quantity or less of the resized data that is less than or equal to a predetermined space quantity; and

generating second mask data, to be aligned with the first mask data, having a window portion for selectively exposing an area determined by enlarging the space area between the enlarged design patterns of the resized data by the resizing quantity.

2. (Currently amended): The method of claim 1, wherein the resizing quantity is larger than a half value of a difference[[,]] between a minimum line width, with which [[a]] at least one of the patterns pattern can be optically resolved by the projection exposure system, and a line width of the design pattern.

3. (Currently amended): The method of claim 1, wherein the space quantity is larger than [[the]] a minimum space width with which a pattern at least one of the patterns can be optically resolved by the projection exposure system.

4. (Currently amended): The method of claim 1, further comprising performing optical proximity correction on the first mask data and the second mask data respectively.

5. (Currently amended): The method of claim 1, further comprising: estimating a space width reducing quantity for reducing a second space width, the second space width being associated with [[of]] the pattern to be transferred on the semiconductor substrate, determined by the window portion; and enlarging the window portion by the space width reducing quantity.

6. (Currently amended): The method of claim 1, further comprising performing process proximity correction on the first mask data and second mask data to prevent a process proximity effect in a process for reducing a second space width of the pattern to be transferred on the semiconductor substrate.

7. (Currently amended) The method of claim 1, wherein preparing the design data comprises:

estimating a space width reducing quantity for reducing a second space width, the second space width being associated with [[of]] the pattern to be transferred on the semiconductor substrate, determined by the window portion; and preparing the design data based on the first space width and the second space width and having a minimum space width with which a pattern at least one of the patterns can be optically resolved by the projection exposure system ~~or less~~.

8. (Withdrawn) A method for forming a pattern comprising:
 - depositing a process-target film on a semiconductor substrate;
 - depositing an underlying mask film on the process-target film;
 - delineating a first resist film on the underlying mask film;
 - delineating a first resist pattern by transferring a pattern of a first mask onto the first resist film;
 - delineating an underlying mask pattern having narrower line width than a line width of the first resist pattern by removing a part of the underlying mask film;
 - delineating a second resist film on the underlying mask pattern;
 - delineating a second resist pattern having a window portion for exposing a part of the underlying mask pattern, by transferring a pattern of a second mask onto the second resist film; and
 - removing a part of the underlying mask pattern selectively, using the second resist pattern as an etching mask.

9. (Withdrawn) The method of claim 8, wherein forming the underlying mask pattern comprises:

forming a resized resist pattern by slimming the first resist pattern;
removing a part of the underlying mask film selectively, using the resized resist pattern as an etching mask; and
removing the resized resist pattern.

10. (Withdrawn) The method of claim 8, wherein forming the underlying mask pattern comprises:

forming a resized resist pattern by slimming the first resist pattern, and forming the underlying mask pattern by removing a part of the underlying mask film selectively at the same time; and
removing the resized resist pattern.

11. (Withdrawn) The method of claim 8, wherein forming the underlying mask pattern comprises;

forming a pattern of the underlying mask film by removing a part of the underlying mask film selectively with the first resist pattern as an etching mask;
removing the first resist pattern; and
forming the underlying mask pattern by slimming the pattern of the underlying mask film.

12. (Withdrawn) The method of claim 8, further comprising removing a part of the process-target film, using the underlying mask pattern which a part thereof is selectively removed as an etching mask.

13. (Withdrawn) The method of claim 8, further comprising reducing the window portion of the second resist pattern by a thermal process so as to have a smaller size than a minimum space width with which a pattern can be optically resolved by a projection exposure system, between the forming of the second resist pattern and the removing of a part of the underlying mask pattern.

14. (Withdrawn) The method of claim 8, further comprising, between the forming of the second resist pattern and the removing of a part of the underlying mask pattern:

- depositing an over-coat film on the second resist pattern;
- forming a mixed layer covering a part of the window portion of the second resist pattern by mixing a part of the second resist pattern and a part of the over-coat film by thermal process; and
- removing the over-coat film.

15. (Withdrawn) The method of claim 14, wherein the removing of a part of the underlying mask pattern removes a part of the underlying mask pattern, using the second resist pattern and the mixed layer as etching masks.

16. (Withdrawn) The method of claim 8, further comprising depositing an auxiliary underlying mask film on the process-target film having a higher etching rate than etching rate of the underlying mask film, between the depositing of the process-target film and the depositing of the underlying mask film.

17. (Withdrawn) The method of claim 16, further comprising removing a part of the auxiliary underlying mask film, using the underlying mask pattern which a part thereof is selectively removed as an etching mask.

18. (Withdrawn) The method of claim 8, further comprising depositing a first antireflection film on the process-target film, between the depositing of the underlying mask film and the forming of the first resist film.

19. (Withdrawn) The method of claim 8, further comprising depositing a second antireflection film on the first resist film, between the forming of the first resist film and the forming of the first resist pattern.

20. (Withdrawn) A set of masks for forming thin line portion having a line width thinner than a minimum line width which can be optically resolved by a projection exposure system by slimming a line width of a pattern transferred on a semiconductor substrate, the set of masks comprising:

a first mask having the thin line pattern for forming the thin line portion; and

a second mask having a window portion for removing an unnecessary portion from a pattern transferred by the first mask.